

NEORIBATES AURANTIACUS IN JAPAN (ACARIDA: ORIBATIDA)

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Synopsis

SUZUKI, Keiichi (5-88 Senju, Adachi-ku, Tokyo 120, Japan): *Neoribates aurantiacus* in Japan (ACARIDA: Oribatida). *Acta Arachnol.*, 28: 63-70 (1979).

I described *Neoribates rimosus* as a new species in 1978, having stated that Japanese neoribatid species which were recorded in that time could be listed as *N. aurantiacus* and *N. macrosacculatus*.

As a result of adjustment in the present study, it is revealed that *Neoribates aurantiacus* sensu AOKI, 1966 is the synonym of *N. roubali* (BERLESE, 1910). The Japanese neoribatid species can be resumed as *N. macrosacculatus*, *N. rimosus* and *N. roubali*.

***Neoribates aurantiacus*, its bibliographical history.**—This species was described by OUDEMANS (1914) under the name *Galumna aurantiaca*. In this paper he did not show its figure. After the description its name appeared in several literatures as follows:

Neoribates aurantiacus (OUDEMANS, 1914)

Galumna aurantiaca: OUDEMANS, 1914, p. 36; OUDEMANS, 1915, p. 13.

Neoribates aurantiaca: OUDEMANS, 1917, p. 16, figs. 14-23; SELNICK, 1928, p. 9, fig. 9.

Neoribates aurantiacus: WILLMANN, 1931, p. 178, fig. 305; HAMMER, p. 61, fig. 95; SCHWEIZER, 1956, p. 356, fig. 330a, b; KUNST, 1959, p. 39, 1952, fig. 3B.

In *Arch. Natwg.* 82 (1917), OUDEMANS drew several illustrations of the species and stated on detailed morphological characters as “*Behaarung für eine Galumna ungewöhnlich lang. Drei Sternalpaare, drei Coxalpaare (I, II, IV), keine Ventralpaare, zwei auf jeder Genitalklappe, zwei auf jeder Analklappe, zwei noch längere Paare postanal*” on the page 18. His figure No. 15 (figure 1A of the

present paper was redrawn from his figure) on the page 17 shows clearly the existence of two pairs of long adanal setae and the absence of aggenital setae, even their setal pores.

Neoribates aurantiacus sensu AOKI, 1966.—AOKI (1966) described 12 galumnoids. In the study *N. aurantiacus* was reported with several illustrations. His *N. aurantiacus* has a pair of aggenital setae and has no long adanal setae, but possesses ad_{1-3} of normal length. It is obvious from the above evidence that *N. aurantiacus sensu AOKI* is not the same species as the OUDEMANS's *N. aurantiacus*.

BERLESE (1910) recorded and described *Oribates roubali* from Bohemia. Four years later, he established the subgenus *Neoribates* under the genus *Oribates* with *roubali* as the type species. In his work in 1914 we can see a brief description and a single figure. In comparison with the Japanese *N. aurantiacus sensu AOKI*, *N. roubali* (BERLESE, 1910) is very similar to the AOKI's *aurantiacus*. BERLESE (1914) stated that "*Lamellae nullae, ne dente anteriori quidem significatae. Pteromorphae dense canaliculato-nervosae. Organa pseudo-stigm. sat roubste clavata, apice acuta*". The shape of sensillar head of *N. aurantiacus sensu AOKI* well agrees with his description and his illustration. Pteromorph vein structure, as TRAVÉ (1972) stated, is quite distinct in the adult stage which does not pass enough time from the last molting. The explanation "*Lamellae nullae*" is very important, and the following fact is also important: in BERLESE's description of *Oribates (Neoribates) fissuratus* in the same page, whereas he used the same expression "*Lamellae nullae, ne dente anteriori quidem significatae*", his figure of the species shows well discernible lamellae.

From the above mentioned points I think that there is a enough reason to consider that *roubali* has lamellae, and it is adequate to recognize Japanese *N. aurantiacus sensu AOKI, 1966* is the synonym of *N. roubali* (BERLESE, 1910). Therefore, the Japanese neoribatid species can be resumed as follows:

- (1) *Neoribates macrosacculatus* AOKI, 1966
- (2) *Neoribates rimosus* SUZUKI, 1978
- (3) *Neoribates roubali* (BERLESE, 1910)

Neoribates aurantiacus: AOKI, 1966, p. 272, figs. 34-39; 1967, p. 136; 1970, p. 438; 1972, p. 251; 1976, p. 96; AOKI & HARADA, 1977, p. 129; 1977, table 2; AOKI, ISHIKAWA & SHIBA, 1977, table 10; AOKI, 1978, table 1; AOKI & KURIKI, 1978, p. 171-172, fig. 3e; FUJIKAWA, 1970, p. 73;

1972, p. 170, fig. 71; FUJITA, NISIDE & AOKI, 1978, p. 21, fig. 4; HARADA & AOKI, 1978, p. 160; NAKATAMARI, 1978, table 1; SHIBA, AOKI & ISHIKAWA, 1978, p. 117; SUZUKI, 1978a, p. 119; 1978b, p. 167. pl. 32.

Supplementary description to *N. roubali*.—AOKI's description (1966) is detailed and useful for identification on the species. I supplement only the pedal chaetotaxy to it.

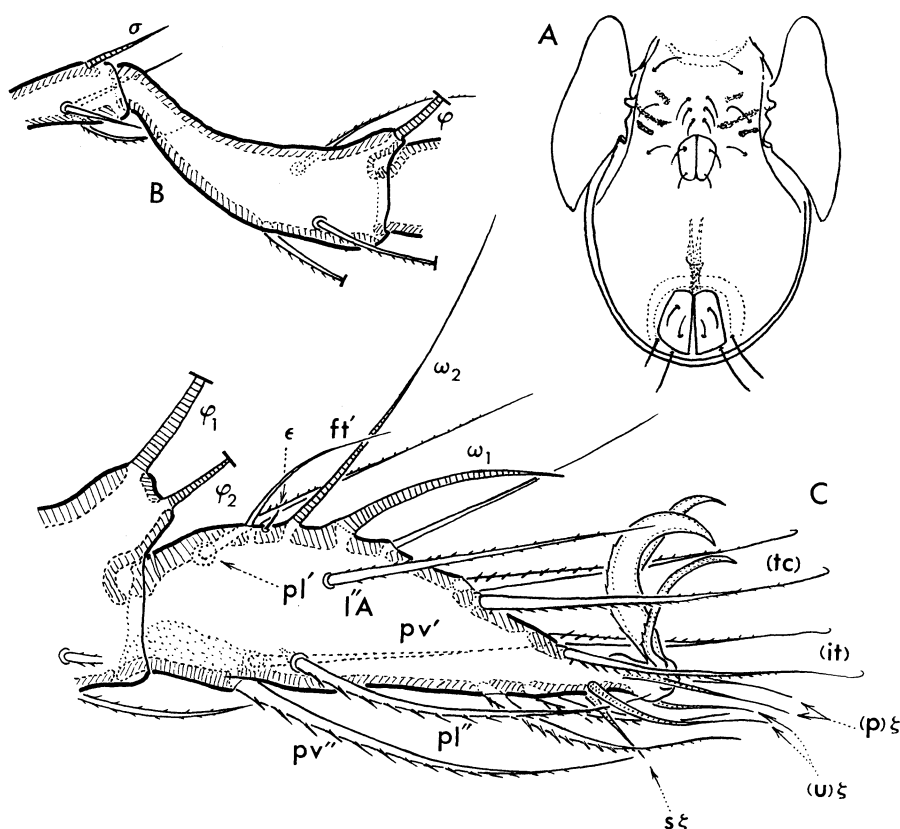


Fig. 1 Problematical neoribatid species.

- A) An illustration of *Neoribates aurantiacus* redrawn after OUDEMANS (1917); there are no aggenital setae; two pairs of long adanal setae are distinct.
- B) The right tibia II of the Japanese *N. roubali* (= *N. aurantiacus* sensu AOKI, 1966); this segment is strongly curved ventrad.
- C) The right tarsus I of the same species mentioned above; this segment has 19 setae and two solenidia, there is a single accessory lateral seta *l''A*.

Chaetotaxy and solenidiotaxy can be described as follows: I (1-5-3-4-1-3), II (1-5-3-3-15-3), III (2-3-1-3-15-3), IV (1-2-2-4-12-3); I (1-2-2), II (1-1-2), III (1-1-0), IV (0-0-0). Tarsal chaetotaxy of leg I is common to *N. rimosus* and *N. aurantiacus*¹⁾ in having 19 setae. Two pairs of setae, (*it*) and (*tc*), have weak distal curls (Fig. 1C). Eupathidids (*p*), (*u*) and *s*: the seta *s* remarkable in its straight profile; the former species has normal gently curved seta *s*, but the present species possesses sharply pointed and straight *s*. Solenidion ω_1 rather thin and has not so blunt tip as observed in *N. gracilis* and *N. rimosus*. Genu II strongly curved ventrad like in Fig. 1B, having not smooth dorsal surface. The dorsal surface slightly wrinkled transversely.

Known distribution in Japan.—Hokkaido: Higashi-misumai [C412392-14]²⁾, Ishikari-hama [C412432-23], Moashoro [C434433-21], Kikonai [C402415-31], Noppro [C412431-42], Mt. Taishetsu [C42435-30]; Aomori-kén: Okuyagén [C411413-12]; Miyagi-kén: Onagawa [C412383-43]; Niigata-kén: Kurokawa [C393381-11], Yuzawa [C384366-13]; Fukushima-kén: Mt. Bandaï [C401374-23], Goshikinumma [C401374-24], Tsuchiyu [C402375-21]; Tochigi-kén: Sénjoh-gahara [C392365-43], San-no pass [C392365-44], Yumoto [C392366-42], Lake Chuzénji [C392365-42], Mt. Hantsuki [C392365-41]; Gunma-kén: Mt. Haruna [C384363-24], Lake Marunuma [C392365-24], Minakami [C384365-43], Mt. Tanigawadaké [C384365-43]; Ibaraki-kén: Namasé [C402365-33]; Chiba-kén: Kasiwa [C394365-41], Mt. Kiyosumi [C401351-34]; Tokyo-to: Hinohara [C391355-22], Kokubunji [C392355-44], Mt. Kagénobu [C391354-44], Kazuma [C391355-12], Mt. Jinba [C391354-34], the Meiji Shrine [C393355-41], Machida [C393354-33], Onkata [C391355-41], Mt. Takao [C391354-43], Sénju [C394355-12]; Kanagawa-kén: Ubako [C391352-12], Séngokuhara [C391352-13], Hakoné-én [C391352-12], Mt. Kintoki [C391352-13], Hatajuku [C391352-21], Tomioka, Yokohama City [C393353-31], Shiomidai [C393354-13], Cape Manazuru [C391354-34]; Shizuoka-kén: Amagi pass [C391346-11], Nanataru [C384414-34], Shimogamo spa [C384344-24]; Yamanashi-kén: Sasago, Ohtsuki City [C384354-23], Hinokagé, Katsunuma City [C394354-14], Mt. Mitsutogé [C384354-12], Aokigahara [C383353-34], Mt. Ashiwada [C383353-44], Lake Yamanaka [C384353-22]; Nagano-kén: Kirigaminé [C381361-33], Utsukushigahara [C381362-32], Lake Shirakoma [C382361-22],

¹⁾ TRAVÉ's statement (1972) based on OUDEMANS's specimens.

²⁾ Henceforth *Locality Index* of KANAI (1972) is used for the permanent indication of locality. This method is used for various purposes in statistical and computer operation.

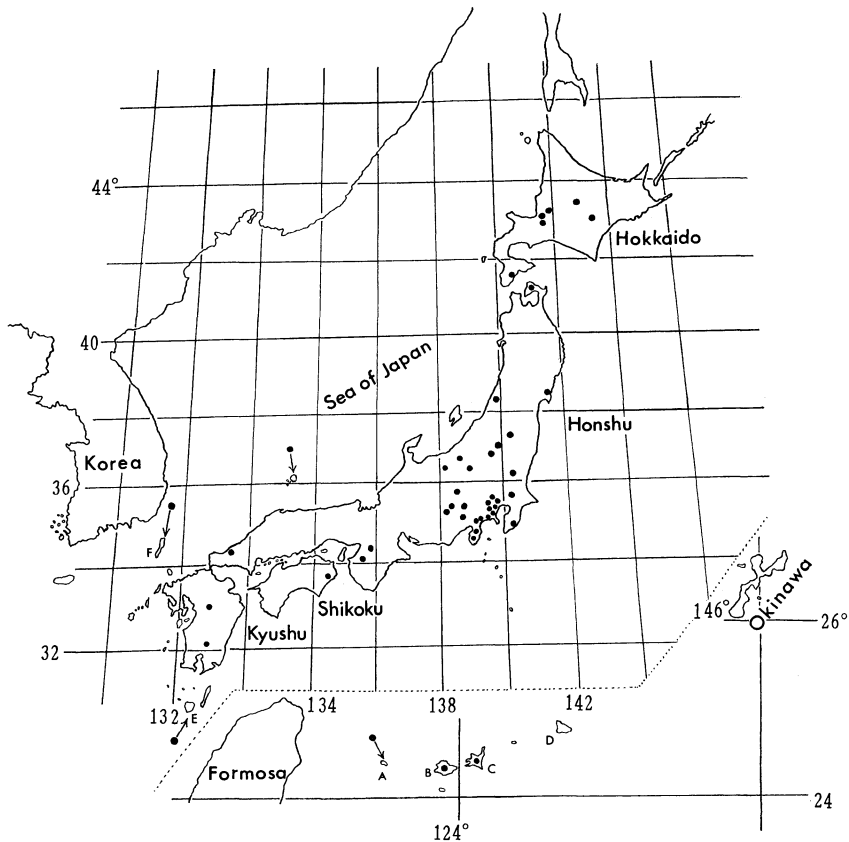


Fig. 2 Distribution of *N. roubali* in Japan.

This figure shows the wide distribution of the species from the northernmost Hokkaido to the southernmost Iriomote Island. A: Yonaguni Island, B: Iriomoté Island, C: Ishigaki Island, D: Miyako Island, E: Yaku Island, F: Tsushima Islands.

Tatésina [C381361-12], Kita-karuzawa [C383363-24], Mt. Madarao [C382366-11]; Wakayama-kén: Mt. Koya [C355542-22], Hashimoto [C352343-23]; Shimané-kén: Oki Island [C361546-43]; Yamaguchi-kén: Hagi [C312343-32]; Oh-ita-kén: Tsuédaté [C311332-11]; Nagasaki-kén: Mt. Mitaké, Tsushima Islands [C292344-32]; Miyazaki-kén: Takachiho [C312325-12]; Kagoshima-kén: Mt. Miyanouradaké, Yaku Island [C303302-14]; Okinawa-kén: Sakiédaonzaki, Ishigaki Island [C241243-23], Mt. Hoshinomangé, Ishigaki Island [C241243-43], Mt. Kimbu, Ishigaki Island [C242243-14], Mt. Koza, Iriomoté Island [C234234-21], Mt. Urabé, Yonaguni Island [C231243-13].

《Indicating method of KANAI's Locality Index³⁾》

The network of geoquadrat based on the 1:50000 map is indexed as follows. A geoquadrat is expressed with a 6 figured number. The 1st and the 2nd figures indicate the longitude with the omission of its 3rd order, and the 3rd figure does one of 4 sectors within the longitude. The 4th and the 5th figures indicate the latitude and the 6th figure does one of 6 sectors within the latitude. For example, Lake Chuzénji is expressed by locality index as [392365].

A geoquadrat is further divided into 4 sectors longitudinally and latitudinally, and a 2 figured number indicating a proper sector is suffixed with hyphen in order to express smaller region. Thus, Mt. Hantsuki by Lake Chuzénji is [392365-41] in locality index. Eight alphabetical letters from A to H can be prefixed in order to distinguish the localities, expressed with the same index, in 8 regions on the globe. Thus, the index of Mt. Hantsuki, Lake Chuzénji is [C392365-41].

摘 要

鈴木 恵一 (東京都足立区千住 5-88): 日本産 フクロフリソデダニ *Neoribates aurantiacus* (OUDEMANS, 1914) の再検討 (ACARIDA: Oribatida)。

ヨーロッパからしばしば報告されるフクロフリソデダニは、日本からは1966年 AOKI によってその存在が明らかにされたが、OUDEMANS (1917) が再記載した *N. aurantiacus* とは ① 1 対の *ag* を有する, ② 肛扉より長い 2 対の *ad* を持たない, ③ 基節板毛式が異なるなどの点で一致せずむしろ *N. roubali* (BERLESE, 1910) と似た点がある。

このようなことから従来我国においてフクロフリソデダニとされていた *N. aurantiacus* は, *N. roubali* と考えられる。

また, 産地の標示法を KANAI (1972) の提唱した Locality Index を用いて示した。本方法により産地は行政区画変更による不安定さを解消されるのみでなく, 探索の煩雑さからも解放され, さらに将来のコンピューター応用時のプログラミングを容易にする。

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³⁾ Modified from KANAI (1972).

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